

A Species of the Boreal Genus *Cosmetopus* Becker (Dipt., Scatophagidae) New to the British Isles, taken by the River Test in Hampshire

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On 21st June 1970 we were collecting along the banks of a backwater of the River Test on the Leckford Estate near Stockbridge, North Hampshire, when a female of a rather small fly of undistinguished appearance, belonging to the Family Scatophagidae and rather similar in build and coloration to *Chaetosa punctipes* Mg., was swept from waterside vegetation by one of us (AES). As this insect proved to be a species not hitherto recorded from the British Isles, we have frequently revisited the collection locality to seek further specimens. Most of these visits have proved unsuccessful but on 4th July 1971, two more females were beaten (by PJC) from the foliage of an osier (*Salix viminalis* L.) overhanging the river not far from the spot where the first was taken. Unfortunately no males of this species have yet been collected in Britain.

Preliminary examination of the insect, which is predominantly grey dusted with yellow legs and has a rather striking orange coloration to the frons, showed that it was not *C. punctipes*. The latter species, which we have taken elsewhere on the Leckford Estate and at Windsor, Berks, and Thursley Common, Surrey, differs in several important respects, notably the possession of two sternopleural bristles (only one in our specimens) and a pointed tip to the third antennal joint. The most recent revision of the British species of this family was by Collin (1958) and the only more recent additions to the British list of which we are aware were our discovery of *Norellia spinipes* Mg. in southern England (Chandler & Stubbs, 1969; Chandler, 1970) and the additions made by Nelson (1965, 1972) in the north of England of *Scoliaphleps ustulata* Zetterstedt and *Coniosternum tinctinervis* Becker.

Taxonomic Discussion

In Collin's key to the genera our specimens ran to the genus *Microprosopa*. Of this genus, however, he knew of only one British species, *M. pallidicauda* Zett. (*pallidicauda* of Collin), which is known only from the Spey Valley in Scotland. We were already in possession of North American specimens of *M. pallidicauda* kindly given to us by Dr J. R. Vockeroth and comparison with these showed that the Leckford specimen was certainly a distinct species. As Collin (*op. cit.*) stated, two other species of the genus *Microprosopa* had been erroneously recorded from Britain by earlier authors, i.e. *M. hae-*

morrhoidalis Mg. and *M. heteromyzina* Zett. Reference to the key to the Palaearctic species of the genus given by Sack (1937) showed that our fly could not belong to any of the three species mentioned above and it was found to run readily to *M. fulvipes* Zett., on the basis of a pale haired grey dusted black abdomen, palpi darkened and mainly yellow antennae. It agreed almost entirely with the longer description given by Sack for *M. fulvipes* except with regard to his comments on the sexual differences in the colour of the antennae; he stated that the male antennae have the third joint reddish yellow and brownish at the tip while in the female the antennae are entirely brown. Our specimens, which are females, have the antennae entirely yellow except for a slight brown discoloration on the anterior margin of the third joint.

Subsequent to Sack's work on the Palaearctic species, Hackman (1956) produced his revision of the Scatophagidae of Finland. In this paper on page 24 he gives a full account of his reasons for synonymising *M. fulvipes* with *Cosmetopus bergrothi* Becker (1900). Zetterstedt's original description of *fulvipes* was from a single Swedish female and Becker (1894) wrongly associated this with the male of another species and so placed *fulvipes* in *Microprosopa* although the type specimen and description agreed substantially with the female of his species *C. bergrothi*, described in 1900 from Siberian specimens. In view of this, Hackman proposed that the species should be known as *Cosmetopus fulvipes* (Zett.). The genus *Cosmetopus* is distinguished from *Microprosopa* in the male by a ventral apophysis on the front femur which fits into a notch in the tibia, while the female is distinguished by the shape of the palpi, more elongate and widening subapically in *Cosmetopus* but lancet shaped, i.e. widest just after the middle in *Microprosopa*.

Our specimens were submitted first to Dr J. R. Vockeroth, who confirmed that they belonged to the genus *Cosmetopus*. He wrote on March 16th 1972 that these specimens were not *longus* Walker, so he assumed that they must be *dentimanus* Zetterstedt, 'the only other Palaearctic species known'. He further remarked that he and Hackman did not agree on the identity of the type female of *C. fulvipes* Zetterstedt; Vockeroth considered it to belong to *dentimanus* but Hackman (as mentioned above) had decided it to be *bergrothi* (= *longus*). Dr Vockeroth sent one of the flies to Mr H. Andersson at Lund for comparison with type material; recent information received by us from Dr W. Hackman (*in litt.*, 15.x.1973) has confirmed that Vockeroth's view is correct. Dr Hackman has said that he was mistaken in synonymising *bergrothi* with *fulvipes* and he now accepts the synonymy of *dentimanus* Zetterstedt = *fulvipes* Zetterstedt and in the case of the other species *longus* Walker = *bergrothi* Becker.

The three British females would therefore appear to belong to the species *Cosmetopus dentimanus* Zetterstedt and we are adding it to the British list under this name. The female

of this species is apparently distinguished from that of *longus* and that of a yet undescribed Swedish species (Hackman, *in litt.*) by having less spatulate palpi. Dr Hackman refers to variation in colour of the antennae and palpi in *dentimanus* females. In the British specimens the third antennal joint is entirely yellow while the palpi are widely darkened apically, being only slightly paler towards the base. Apparently in Swedish specimens there is variation in the colour of the third antennal joint, which may be dark on the apical third only or on the apical two thirds, in both instances having the palpi dark only at the tip, while two Finnish specimens have a strongly darkened third antennal joint, only yellow at the base and entirely dark palpi. As *Cosmetopus* are nowhere common and only limited material is available of all species (both European and Nearctic), Dr Hackman reasonably comments that the taxonomic value of these colour characters is difficult to judge but he suggests on the basis of the variation in the Fennoscandian specimens that the colour of the third antennal joint and palpi may vary independently.

There appears at present to be no reason to doubt that our specimens are conspecific with *C. dentimanus*, but the discovery of males in this country is hopefully awaited so that this may be confirmed without doubt. The possibility certainly cannot be excluded that the Leckford specimens represent an undescribed species, bearing in mind the far cry of their habitat from the previously known haunts of this species.

Distinguishing characters

C. dentimanus is a slender bodied predominantly grey dusted fly (length 5 mm.) with yellow legs and slightly yellow tinged wings. As it runs to *Microprosopa* in Collin's (*op. cit.*) key, it is probably most helpful to detail the salient features (apart from the generic characters mentioned above) by which it may be separated from *M. pallidicauda*. With the aid of these distinctions there should be no possibility of confusion resulting in the identification of future material collected of these species. A representative specimen will be deposited in due course in the collection of the British Museum (Natural History). Should the male be taken here it may be easily recognised from the figure by Séguy (1952) of the entire insect (lateral view).

Dusting of body ashy grey in *pallidicauda*; golden yellow tint on dorsum of thorax in *dentimanus*.

Bristles of head and thorax all black in *pallidicauda*; verticals, ocellars, vibrissae and pleural bristles yellow in *dentimanus*, although other bristles are black.

Frontal stripe mainly pale dull yellow, grey above, in *pallidicauda*; bright orange yellow in *dentimanus* (the head is otherwise mostly yellow but for the grey dusted occiput in both species).

Antennae entirely black in *pallidicauda*; at least partly yellow in *dentimanus* (mainly yellow in British specimens with only slight darkening along entire anterior margin of third

joint).

Palpi entirely yellow in *pallidicauda*; darkened at least apically in *dentimanus* (mainly greyish brown, slightly paler at the base in British specimens).

Fore femora in the female of *pallidicauda* with only fine pale hairs beneath; in *dentimanus* these femora have a strong ventral swelling on the basal three-fifths bearing thick pale hairs and at the point where it rapidly narrows to the slender apical portion a few short black spines are present.

Mid and hind tibiae with one or two posterodorsals as well as anterodorsals in *Microprosopa*; mid tibiae with a median anterodorsal and hind tibiae with two anterodorsals (one median, the other basad to it) but no posterodorsals on either in *dentimanus*.

Habitat considerations

The Leckford locality of *C. dentimanus* may be summarised as the banks of a small calcareous river running through peaty fenland and with a rich flora at the transition between open fen, carr and drier fen woodland.

Cosmetopus, according to Dr Vockeroth (*in litt.*) belongs to the group of genera within the Scatophagidae, which probably have predaceous larvae living in subaquatic or aquatic situations. Other genera in Britain probably belonging to this group are *Microprosopa*, *Pogonota*, *Chaetosa* and *Trichopalpus* although only in *Spaziphora* has the life cycle been fully worked out — the predaceous larvae in sewage beds and stagnant water (Lloyd, Graham & Reynoldson, 1940). The ovipositors in these genera are apparently of the type found in *Scatophaga* itself, suggesting that the eggs are probably inserted into a wet substrate, e.g. soil while the phytophagous genera (e.g. *Norellia*, *Gimnomera*, *Cordilura*, *Delina*, etc.) have ovipositors of different types enabling them to oviposit in their respective food-plants. It would appear likely then that the larval habitat of *C. dentimanus* at Leckford is the river itself or the peat of the adjacent fen.

Although flies of the genus *Cosmetopus* are recorded from moist habitats (Hackman, *op. cit.*), the existing records are from Northern Europe (Fennoscandia and Siberia) in boreal or subarctic situations and from the Swiss Alps. In view of the previously known distribution of the genus, therefore, its discovery in this lowland locality in southern England is particularly remarkable albeit that the concentrated collecting we have carried out on the Leckford Estate has shown it to have a very rich Dipterous Fauna, including at least thirteen species of Scatophagidae. There are many localities of a similar nature elsewhere in Britain and the fly must surely turn up in other places if looked out for.

Acknowledgements

We would like particularly to express our thanks for the kindness shown in elucidating the identity of the flies recorded here by Dr J. R. Vockeroth (Ottawa), Mr H. Andersson (Lund) and Dr W. Hackman (Helsinki). The flies were collected in

the area administered by the Leckford Estate (John Lewis Partership) but not within any of the series of small nature reserves which have been set aside for long term entomological study and we have to thank the administrators of the Estate for the opportunity to participate in the Biological Survey which has been in progress there now since 1969.

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Andricus lignicolus (Hartig) (Hym.: Cynipidae) in S.E. England: A Species New to Britain

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On 25th October 1972 I found six small galls which I took to be poor specimens of the agamic form of *Andricus kollari* (Hartig) ("Oak marbles"). They were on a small tree of *Quercus robur* along the Rhinefield Ornamental Drive near Brockenhurst in the New Forest. They were woody, rough and scaly. Four had emergence holes. I took the other two home and numbered them 438vs (very small) and 439vs. I kept them in separate phials with the oak marbles I was studying for breeding.

On 29th June 1973 I opened them. 438 was empty; 439 contained a dead perfect insect that was brown like a small specimen of *A. kollari*. I kept it with its gall as an instance of a small gall producing a perfect insect and not parasites as